

XXXVII.—ANIMAL BAROMETERS

Yellow frogs are the males of *Rana tigrina*, the largest of Indian frogs, which invariably make their appearance on some spot of ground converted into a quagmire of shallow pools of water after a heavy fall of rain. Here in Bombay a piece of waste land in a congested part of Mazagon was converted into a series of shallow pools littered with heaps of old disused bricks, and in the early morning hours of June 12, after a night of heavy rain, great yellow frogs were observed bellowing and baying and leaping about in the slushy pools of mire and water impelled by that universal *cherchez la femme* instinct implanted in the bosoms of frogs, beasts, and humans to show off before the fair sex. There were about ten 'he's' to every 'she' and the competition for partners amongst the 'he' bull frogs was consequently rather keen. The females were of a uniform muddy brown colour, harmonizing in tint with the muddy bricks and clods of earth submerged in pools of dirty rain water and surrounded at times by three or four gaudy coloured males in their liveries of flunkey yellow who appeared to be bawling at the top of their voices a refrain which suggested the lines from the famous play of Aristophanes which will bear repetition if only for its onomatopoeic and nonsensical jingle :

' We've a right '
 ' We've a right '
 ' And we croak at ye for spite '
 ' We've a right '
 ' We've a right '
 ' Day and night '
 ' Day and night '
 ' Night and day '
 ' Still to creak and croak away '
 ' We proceed as we began '
 Kooash ! Kooash.

There is nothing mysterious about the sudden appearance in great numbers of these bull frogs at the onset of the rains, who during the dry hot months remain hidden away under broken bits of masonry and in the recesses of cool cisterns and drains undergoing a sexual colour change from dark or brownish-green to the deep canary yellow assumed by the males when they burst forth in all their splendour at the breaking of the rains. The yellow nuptial dress rapidly fades to the usual normal tint with the exception perhaps of a faint yellow line traced along the back from the posterior to the front indicative of the sex of a batrachian reveller who bellowed his loudest on some dark morning at the onset of the monsoons. The frogs are in fact animal barometers as on the same piece of ground already referred to they appeared on June 16, 1927, the date of the bursting of the monsoon that year in Bombay that is four days later than 1928 (June 12). One of the male frogs it was observed had not assumed his full nuptial garb of flunkey yellow but was in a transition state. The monsoon was a bit too early for him ! It had no effect however on his voice as he

bellowed as loudly as the other masculine suitors, relying perhaps on his vocal powers. These great bull frogs are very voracious. On one occasion a large frog was seen to leap out of a cistern and seize by the head a small duckling which was rescued with difficulty from the predatory maw of the batrachian.

THE STRANGER'S HOME,
MAZAGON,
BOMBAY.

H. JOUGUET.

XXXVIII.—MIGRATION OF BUTTERFLIES

With reference to your enquiry regarding migratory flights of Indian butterflies, I have repeatedly seen large flights of *Catopsilia pomona* in Kumaon. These appear to be of two different natures, as follows:—

- (a) In more or less of a herd.
- (b) In single file.

In the former, which I have seen at different times of the day and, on one occasion, as late as 6 p.m., the formation is irregular, elevation from 30 to 100 feet and the speed comparatively slow, whereas in the latter the flight is characterized by great rapidity and purposefulness and, as far as I have seen, is always at an elevation of less than 15 feet.

On one occasion last year I counted upwards of 200 insects in a flight of the latter nature, each insect at a regular interval after the other and so close to me that I was able to determine the *catilla* variety, of which there were several, from the common type. The line of flight was across a flower garden in which other *Catopsiliads* were feeding but which appeared to have no attractions for the migrants as none slackened speed but continued in a straight line until out of sight.

It would appear that 'Herd' formation and slow speed is the order of the day when a long migration is contemplated and single file and rapid speed when the goal is comparatively near. At the same time it is remarkable that, when passing over an attractive flower garden, swarming with other butterflies, no single member of the flight should be sufficiently distracted to even check its speed.

BOMBAY,
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G. WESCHE-DART.

XXXIX.—OCCURRENCE OF THE OAK-LEAF BUTTERFLY (*KALLIMA HORSFIELDI*) NEAR BOMBAY

I should be interested to hear whether any member can give me any information as to whether this butterfly is a regular inhabitant of the Salsette country.